

WHAT IS CLAIMED IS:

1. A fire resistant corespun yarn, comprising:
a core of a high temperature resistant continuous filament comprising fiberglass;
a first sheath of blended staple fibers surrounding the core, the fibers comprising modacrylic fibers and melamine fibers; and
a second sheath of staple fibers surrounding the first corespun yarn.
2. The fire resistant corespun yarn according to claim 1, wherein the core has a multi-ply structure.
3. The fire resistant corespun yarn according to claim 2, wherein the multi-ply structure comprises a low temperature resistant continuous filament synthetic fiber selected from the group consisting of polyethylene, nylon, polyester and polyolefin, two-ply with the fiberglass filament.
4. The fire resistant corespun yarn according to claim 1, wherein the second sheath staple fibers are of a material selected from the group consisting of cotton, wool, nylon, polyester, polyolefin, rayon, acrylic, silk, mohair, cellulose acetate, and blends thereof.
5. The fire resistant corespun yarn according to claim 4 wherein the second sheath staple fibers are cotton or polyolefin fibers.
6. The fire resistant corespun yarn according to claim 5, wherein the core is from about 15 to 35% by weight based on the total weight of the corespun yarn, and the second sheath is from about 35 to 80% by weight based on the total weight of the corespun yarn.

7. The fire resistant corespun yarn according to claim 6, wherein the core is about 25% by weight based on the total weight of the corespun yarn, and the second sheath is about 50% by weight based on the total weight of the corespun yarn.

8. The fire resistant corespun yarn according to claim 1, wherein the size of the corespun yarn is from about 30/1 to 1/1 conventional cotton count.

9. The fire resistant corespun yarn according to claim 1, wherein the modacrylic fibers and melamine fibers are present in the first sheath of blended staple fibers in an amount of from about 50 to 90% by weight and from about 10 to 50% by weight, respectively, based on the total weight of the first sheath.

10. A fire resistant corespun yarn, comprising:
a two-ply core of a high temperature resistant continuous filament comprising fiberglass and a low temperature resistant continuous filament synthetic fiber selected from the group consisting of polyethylene, nylon, polyester and polyolefin;
a first sheath of blended staple fibers surrounding the core, the fibers comprising modacrylic fibers and melamine fibers; and
a second sheath of staple fibers surrounding the first corespun yarn,
wherein the core is from about 15 to 35% by weight based on the total weight of the corespun yarn, and the second sheath is from about 35 to 80% by weight based on the total weight of the corespun yarn.

11. A fire resistant fabric, comprising:
a fire resistant fabric substrate, the substrate comprising:
a fire resistant corespun yarn, the yarn comprising:
a core of a high temperature resistant continuous filament comprising fiberglass;
a first sheath of blended staple fibers surrounding the core, the fibers comprising modacrylic fibers and melamine fibers; and

a second sheath of staple fibers surrounding the first corespun yarn.

12. The fire resistant fabric according to claim 11, wherein the core further comprises a low temperature resistant continuous filament synthetic fiber selected from the group consisting of polyethylene, nylon, polyester and polyolefin, two-ply with the fiberglass filament.

13. The fire resistant fabric according to claim 11, wherein the second sheath staple fibers are of a material selected from the group consisting of cotton, wool, nylon, polyester, polyolefin, rayon, acrylic, silk, mohair, cellulose acetate, and blends thereof.

14. The fire resistant fabric according to claim 13, wherein the core is from about 15 to 35% by weight based on the total weight of the corespun yarn, and the second sheath is from about 35 to 80% by weight based on the total weight of the corespun yarn.

15. The fire resistant fabric according to claim 11, wherein the fabric is free of a fire resistant coating.

16. A product upholstered with the fire resistant fabric of claim 11.

17. The product of claim 16, wherein the fabric is free of a fire resistant coating.

18. The product of claim 16, wherein the product is a composite chair, a mattress or a panel fabric furniture system.

19. The product of claim 16, wherein the fabric is free of a barrier fabric.

20. The product of claim 16, wherein upon exposure of the fabric to flame, the first sheath is effective to partially burn and char around the core, thereby preventing rupture and creating oxygen depletion to the product below the fabric.